UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF ALLOWANCE AND FEE(S) DUE

| 46917 | 7590 | 05/05/2010 |

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EXAMINER
WINTER, JOHN M

ART UNIT	PAPER NUMBER
3685	

DATE MAILED: 05/05/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,159	10/11/2001	Glen Alan Jaquette	TUC920010022US1	3879

TITLE OF INVENTION: METHOD, SYSTEM, AND PROGRAM FOR SECURELY PROVIDING KEYS TO ENCODE AND DECODE DATA IN A STORAGE CARTRIDGE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	08/05/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

Complete and send this form, together with applicable fee(s), to: **Mail**   Mail Stop ISSUE FEE
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P.O. Box 1450
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    or **Fax**   **(571)-273-2885**

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

46917   7590   05/05/2010

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_____ (Depositor's name)

_____ (Signature)

_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,159	10/11/2001	Glen Alan Jaquette	TUC920010022US1	3879

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nonprovisional	NO	$1510	$300	$0	$1810	08/05/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
WINTER, JOHN M	3685	705-051000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE   (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.   ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,159	10/11/2001	Glen Alan Jaquette	TUC920010022US1	3879

			EXAMINER
46917	7590	05/05/2010	WINTER, JOHN M

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ART UNIT	PAPER NUMBER
3685	

DATE MAILED: 05/05/2010

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 658 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 658 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

	Application No.	Applicant(s)
Notice of Allowability	09/977,159	JAQUETTE, GLEN ALAN
	Examiner	Art Unit
	JOHN M. WINTER	3685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the appeal brief filed on November 11, 2009*.

2. ☒ The allowed claim(s) is/are *1,3-5,7,8,10-16 and 44-75*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided by

37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no

later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

David Victor on May 3, 2010

Claim 1.

A method for accessing data in a read/write storage medium within one of a plurality of

storage cartridges mounted into a plurality of interface devices, comprising:

providing an association of at least one coding key to the plurality of storage cartridges,

wherein the coding key associated with the storage cartridge is used to decode and code

data in the storage cartridge;

encrypting, by a host device, the at least one coding keys key;

[[and]] storing, by one of the plurality of interface devices, the encrypted coding key keys

in at least one of the storage cartridges;

receiving, by a receiving interface device comprising one of the plurality of interface

devices, an Input/Output (I/O) request to a target storage cartridge comprising one of the

plurality of storage cartridges;

mounting, by the receiving interface device, the target storage cartridge in response to the

I/O request;

reading, by the receiving interface device, the encrypted coding key from the mounted

target storage cartridge;

transmitting, by the receiving interface device, the read encrypted coding key to [[a]] the

host device;

producing a re-encrypted coding key by decrypting the transmitted encrypted coding

key by the host device and re-encrypting the coding key by the host device with the

public key of the receiving interface device;

transmitting by the host device the re-encrypted coding key to the receiving interface

device;

receiving, by the receiving interface device, the re-encrypted coding key encrypted by the

host;

decrypting, by the receiving interface device, the re-encrypted coding key encrypted by

the host to use for the I/O request;

performing a read or write operation in response to the I/O request by decoding read or

write data using the decrypted re-encrypted coding key

using, by the receiving interface device, the decrypted coding key to decode data to read

in the target storage cartridge including the encrypted coding key in response to the I/O

request comprising a read request; and

~~using, by the receiving interface device, the decrypted coding key to code data to write to~~

~~the target storage cartridge including the encrypted coding key in response to the I/O~~

~~request comprising a write request.~~

Claim 2.

(Canceled)

Claim 7.

The method of claim 1, wherein encrypting the coding key further comprises:

encrypting, by the host <u>device</u>, the coding key with a first key, wherein the interface

devices use a second key to decrypt the coding key encrypted with the first key.

Claim 8.

 The method of claim 1, wherein encrypting the coding key further comprises:

encrypting the coding key with a first key, wherein the host <u>device</u> uses a second key to

decrypt the coding key encrypted with the first key, wherein the host <u>device</u> <u>re-</u>encrypts

the coding key by <u>re-</u>encrypting the coding key with a third key, wherein the interface

devices uses a fourth key to decrypt the <u>re-encrypted</u> coding key encrypted by the host

<u>device</u> with the third key.

Claim 9.

(Canceled)

Claim 10.

A method performed by an interface device for accessing data in a removable storage

cartridge including a read/write storage medium coupled to the interface device,

comprising:

receiving an encrypted coding key encrypted by a host device,

providing an association of at least one coding key to a plurality of storage cartridges;

storing by the interface device the encrypting coding key in at least one of the plurality of

storage cartridges;

receiving ~~an encrypted coding key from a host system with~~ an Input/Output (I/O) request

directed to [[the]] a target storage cartridge;

mounting by the interface device the target storage cartridge in response to the I/O

request;

reading by the interface device the encrypted coding key from the mounted target storage

cartridge;

transmitting by the interface device the read encrypted coding key to [[a]] the host

device;

producing by the interface device a re-encrypted coding key by receiving from the host

device a re-encrypted coding key comprising the transmitted encrypted coding key

encrypted by a public key of the interface device, decrypting the re-encrypted coding

key; and

performing by the interface device a read or write operation in response to the I/O request

by decoding read or write data using the decrypted re-encrypted coding key

~~using the decrypted coding key to encode data to write to the storage medium in response~~

~~to the I/O request comprising a write request;~~

~~using the decrypted coding key to decode data written to the storage medium in response~~

~~to the I/O request comprising a read request; and~~

~~storing the received encrypted coding key in the storage medium to use for subsequent~~

~~I/O requests.~~

Claim 12.

The method of claim 10, wherein the coding key is encrypted by a first key maintained at

the host <u>device</u> ~~system~~, further comprising;

maintaining, by the interface device, a second key to decrypt data encrypted using the

first key, wherein the interface device uses the second key to decrypt the coding key

encrypted with the first key.

Claim 16.

The method of claim 10, wherein the received encrypted coding key is encrypted by a

first key maintained at the host <u>device</u> ~~system~~, wherein the host ~~system~~ <u>device</u> maintains

a second key to decrypt data encrypted using the first key, wherein the interface device

decrypts the encrypted coding key by:

receiving, with the I/O request, from the host device system, the second key encrypted by

the host device system using a third key, wherein data encrypted using the third key is

decrypted using a fourth key;

accessing the fourth key;

using the fourth key to decrypt the encrypted second key received from the host device

system; and

using the decrypted second key to decrypt the received coding key encrypted using the

first key.

Claims 17-43.

(Canceled)

Claim 47.

A system for accessing data in a read/write storage medium within one of a plurality of

storage cartridges, and to communicate with a host comprising:

A processor;

A memory connected to the processor, storing executable instructions that when executed

by the processor causes the processor to perform the steps of::

providing an association of at least one coding key to the plurality of storage cartridges,

wherein the coding key associated with the storage cartridge is used to decode and code

data in the storage cartridge;

encrypting, by a host device, the at least one coding keys key;

[[and]] storing, by one of the plurality of interface devices, the encrypted coding key keys

in at least one of the storage cartridges;

receiving, by a receiving interface device comprising one of the plurality of interface

devices, an Input/Output (I/O) request to a target storage cartridge comprising one of the

plurality of storage cartridges;

mounting, by the receiving interface device, the target storage cartridge in response to the

I/O request;

reading, by the receiving interface device, the encrypted coding key from the mounted

target storage cartridge;

transmitting, by the receiving interface device, the read encrypted coding key to [[a]] the

host device;

producing a re-encrypted coding key by decrypting the transmitted encrypted coding

key by the host device and re-encrypting the coding key by the host device with the

public key of the receiving interface device;

transmitting by the host device the re-encrypted coding key to the receiving interface

device;

receiving, by the receiving interface device, the re-encrypted coding key encrypted by the

host;

decrypting, by the receiving interface device, the re-encrypted coding key encrypted by

the host to use for the I/O request;

performing a read or write operation in response to the I/O request by decoding read or

write data using the decrypted re-encrypted coding key

~~using, by the receiving interface device, the decrypted coding key to decode data to read~~

~~in the target storage cartridge including the encrypted coding key in response to the I/O~~

~~request comprising a read request; and~~

~~using, by the receiving interface device, the decrypted coding key to code data to write to~~

~~the target storage cartridge including the encrypted coding key in response to the I/O~~

~~request comprising a write request.~~

Claim 50.

The system of claim 47, wherein encrypting the coding key further comprises:

encrypting, by the ~~host device~~ <u>I/O manager</u> encrypts the coding key with a first key, <u>and</u>

wherein the ~~interface devices~~ <u>controller</u> use a second key to decrypt the coding key

encrypted with the first key.

Claim 51.

The system of claim 47, wherein encrypting the coding key further comprises:

encrypting the coding key with a first key, wherein the ~~host~~ <u>I/O manager</u> uses a second

key to decrypt the coding key encrypted with the first key, wherein the ~~host~~ <u>I/O manager</u>

encrypts the coding key by encrypting the coding key with a third key, wherein the

~~interface devices~~ <u>controller</u> uses a fourth key to decrypt the coding key encrypted by the

host with the third key.

Claim 54.

A system for accessing data in a removable storage cartridge including a read/write

storage medium and in communication with a host device system, comprising:

A processor;

A memory connected to the processor, storing executable instructions that when executed

by the processor causes the processor to perform the steps of:

receiving an encrypted coding key encrypted by a host device,

providing an association of at least one coding key to a plurality of storage cartridges;

storing by the interface device the encrypting coding key in at least one of the plurality of

storage cartridges;

receiving an encrypted coding key from a host system with an Input/Output (I/O) request

directed to [[the]] a target storage cartridge;

mounting by the interface device the target storage cartridge in response to the I/O

request;

reading by the interface device the encrypted coding key from the mounted target storage

cartridge;

transmitting by the interface device the read encrypted coding key to [[a]] the host

device;

producing by the interface device a re-encrypted coding key by receiving from the host

device a re-encrypted coding key comprising the transmitted encrypted coding key

encrypted by a public key of the interface device, decrypting the re-encrypted coding

key; and

performing by the interface device a read or write operation in response to the I/O request

by decoding read or write data using the decrypted re-encrypted coding key

~~using the decrypted coding key to encode data to write to the storage medium in response~~

~~to the I/O request comprising a write request;~~

~~using the decrypted coding key to decode data written to the storage medium in response~~

~~to the I/O request comprising a read request; and~~

~~storing the received encrypted coding key in the storage medium to use for subsequent~~

~~I/O requests.~~

Claim 55.

The system of claim 54, wherein the coding key is encrypted by a first key maintained at

the host <u>device</u> ~~system~~, wherein the operations further comprise:

maintaining a second key to decrypt data encrypted using the first key, wherein the

~~interface device~~ <u>controller</u> uses the second key to decrypt the coding key encrypted with

the first key.

Claim 59.

The system of claim 54, wherein the received encrypted coding key is encrypted by a

first key maintained at the host <u>device</u> ~~system~~, wherein the host ~~system~~ <u>device</u> maintains

a second key to decrypt data encrypted using the first key, wherein the <u>controller</u>

~~interface device~~ decrypts the encrypted coding key by:

receiving, with the I/O request, from the host device ~~system~~, the second key encrypted by

the host device ~~system~~ using a third key, wherein data encrypted using the third key is

decrypted using a fourth key;

accessing the fourth key;

using the fourth key to decrypt the encrypted second key received from the host device

~~system~~; and

using the decrypted second key to decrypt the received coding key encrypted using the

first key.

Claim 61.

An article of manufacture comprising at least one of a non transitory computer readable

storage media storing executable instructions and hardware including an Input/Output

(I/O Manager) and controller for accessing data in a read/write storage medium within

one of a plurality of storage cartridges mounted into a plurality of interface devices,

wherein the executable instructions when executed perform the steps of :

providing an association of at least one coding key to the plurality of storage cartridges~~,~~

~~wherein the coding key associated with the storage cartridge is used to decode and code~~

~~data in the storage cartridge~~;

encrypting, by a host device, the at least one coding ~~keys~~ key;

[[and]] storing, by one of the plurality of interface devices, the encrypted coding key ~~keys~~

in at least one of the storage cartridges;

receiving, by a receiving interface device comprising one of the <u>plurality of</u> interface

devices, an Input/Output (I/O) request to a target storage cartridge comprising one of the

<u>plurality of</u> storage cartridges;

mounting, by the receiving interface device, the target storage cartridge in response to the

I/O request;

reading, by the receiving interface device, the encrypted coding key from the mounted

target storage cartridge;

transmitting, by the receiving interface device, the read encrypted coding key to [[a]] <u>the</u>

host device;

<u>producing a re-encrypted coding key by decrypting the transmitted encrypted coding</u>

<u>key by the host device and re-encrypting the coding key by the host device with the</u>

<u>public key of the receiving interface device;</u>

<u>transmitting by the host device the re-encrypted coding key to the receiving interface</u>

<u>device;</u>

receiving, by the receiving interface device, the <u>re-encrypted</u> coding key ~~encrypted by the~~

~~host~~;

decrypting, by the receiving interface device, the <u>re-encrypted</u> coding key ~~encrypted by~~

~~the host to use for the I/O request~~;

<u>performing a read or write operation in response to the I/O request by decoding read or</u>

<u>write data using the decrypted re-encrypted coding key</u>

~~using, by the receiving interface device, the decrypted coding key to decode data to read~~

~~in the target storage cartridge including the encrypted coding key in response to the I/O~~

~~request comprising a read request; and~~

~~using, by the receiving interface device, the decrypted coding key to code data to write to~~

~~the target storage cartridge including the encrypted coding key in response to the I/O~~

~~request comprising a write request.~~

Claim 66.

The article of manufacture of claim 61, wherein encrypting the coding key further

comprises:

encrypting the coding key with a first key, wherein the ~~host~~ <u>I/O manager</u> uses a second

key to decrypt the coding key encrypted with the first key, wherein the <u>I/O manager</u> ~~host~~

encrypts the coding key by encrypting the coding key with a third key, wherein the

controller uses a fourth key to decrypt the coding key encrypted by the <u>I/O manager</u> ~~host~~

with the third key.

Claim 68.

An article of manufacture comprising at least one of a <u>non transitory</u> computer readable

storage media <u>storing executable instructions</u> and hardware including ~~an Input/Output~~

(I/O Manager) and a controller in an interface device for accessing data in a read/write

storage medium within one of a plurality of storage cartridges mounted into a plurality of

interface devices, wherein the executable instructions when executed perform the steps

of:

receiving an encrypted coding key encrypted by a host device,

providing an association of at least one coding key to a plurality of storage cartridges;

storing by the interface device the encrypting coding key in at least one of the plurality of

storage cartridges;

receiving an encrypted coding key from a host system with an Input/Output (I/O) request

directed to [[the]] a target storage cartridge;

mounting by the interface device the target storage cartridge in response to the I/O

request;

reading by the interface device the encrypted coding key from the mounted target storage

cartridge;

transmitting by the interface device the read encrypted coding key to [[a]] the host

device;

producing by the interface device a re-encrypted coding key by receiving from the host

device a re-encrypted coding key comprising the transmitted encrypted coding key

encrypted by a public key of the interface device, decrypting the re-encrypted coding

key; and

performing by the interface device a read or write operation in response to the I/O request

by decoding read or write data using the decrypted re-encrypted coding key

using the decrypted coding key to encode data to write to the storage medium in response

to the I/O request comprising a write request;

using the decrypted coding key to decode data written to the storage medium in response

to the I/O request comprising a read request; and

storing the received encrypted coding key in the storage medium to use for subsequent

I/O requests.

Allowable Subject Matter

2. Claims 1,3-5,7-8,10-16 and 44-75 are allowed over the prior art record.

3. The following is an Examiner's statement of reasons for allowance:

The closest prior art of record Shear et al. (US Patent Application Publication

2001/0042043) teaches a rights management arrangement for storage media that provides

enhanced, more flexible security techniques and methods when the same media are used

with platforms having higher security capabilities.

4. What they fail to teach or suggest:

As per claims 1, 47 and 61

None of the art of record, taken individually or combination disclose at least the

steps/components of "producing a re-encrypted coding key by decrypting the transmitted

encrypted coding key by the host device and re-encrypting the coding key by the host

device with the public key of the receiving interface device; transmitting by the host

device the re-encrypted coding key to the receiving interface device;

receiving, by the receiving interface device, the re-encrypted coding key;

decrypting, by the receiving interface device, the re-encrypted coding key;

performing a read or write operation in response to the I/O request by decoding read or

write data using the decrypted re-encrypted coding key."

As per claims 10, 54 and 68

None of the art of record, taken individually or combination disclose at least the

steps/components of "producing by the interface device a re-encrypted coding key by

receiving from the host device a re-encrypted coding key comprising the transmitted

encrypted coding key, encrypted by a public key of the interface device decrypting the re-

encrypted coding key; and performing by the interface device a read or write operation in

response to the I/O request by decoding read or write data using the decrypted re-

encrypted coding key"

5. These distinct features render claim 1, 10, 47, 54, 61 and 68 allowable.

    Claims 3-5,7-8,10-16 and 44-75 are either dependant upon claims 1, 10, 47, 54, 61 and

    68 or contain similar limitations and are therefore allowable for at least the same reasons.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JOHN M. WINTER whose telephone number is

(571)272-6713. The examiner can normally be reached on M-F 8:30-6, 1st Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Calvin Hewitt can be reached on (571) 272-6709. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMW

/Calvin L Hewitt II/

Supervisory Patent Examiner, Art Unit 3685